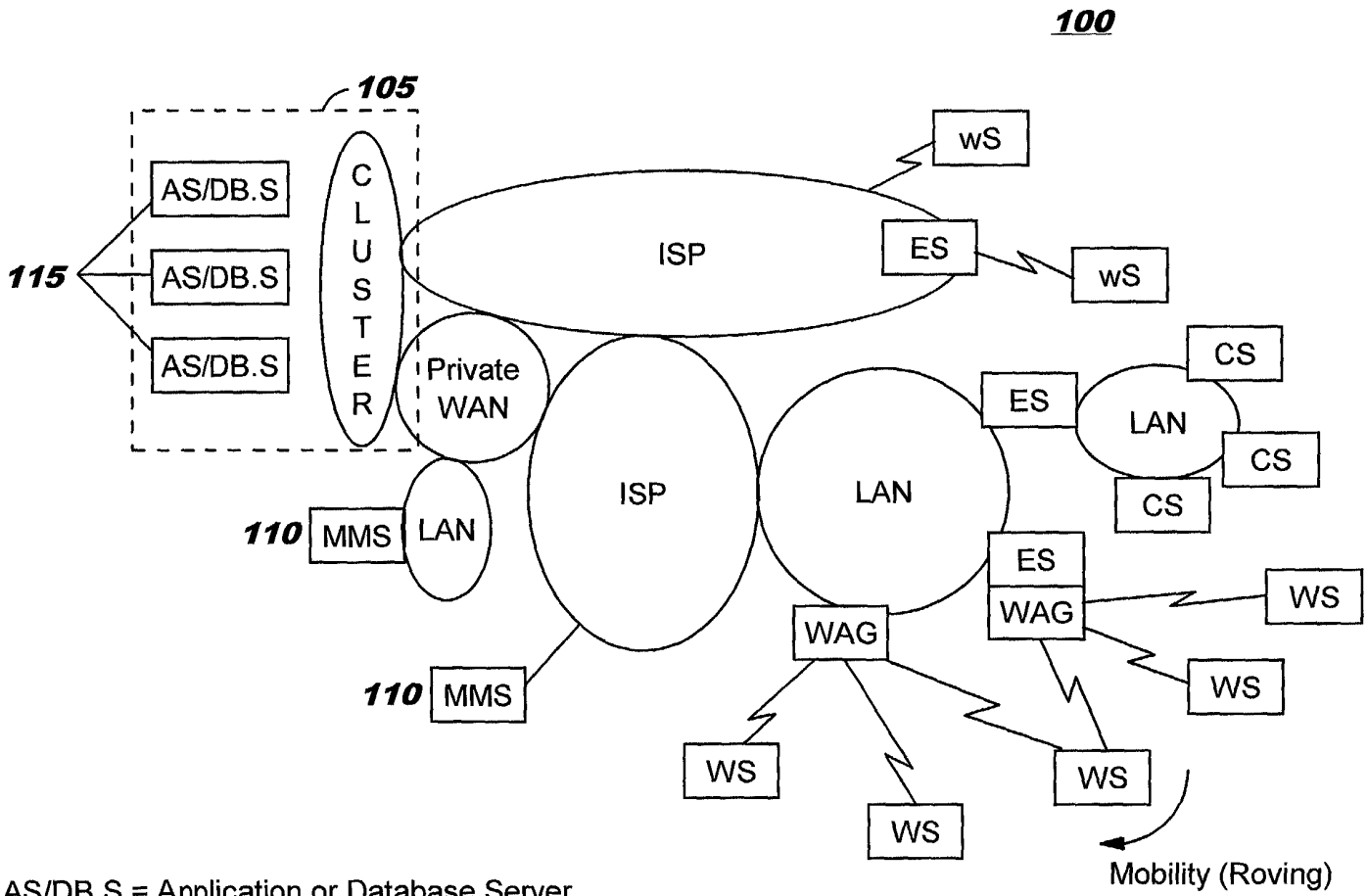
20110095480

FIG. 1



AS/DB.S = Application or Database Server
ES = Edge Server
MMS = Multimedia Server
WAG = Wireless Application Gateway

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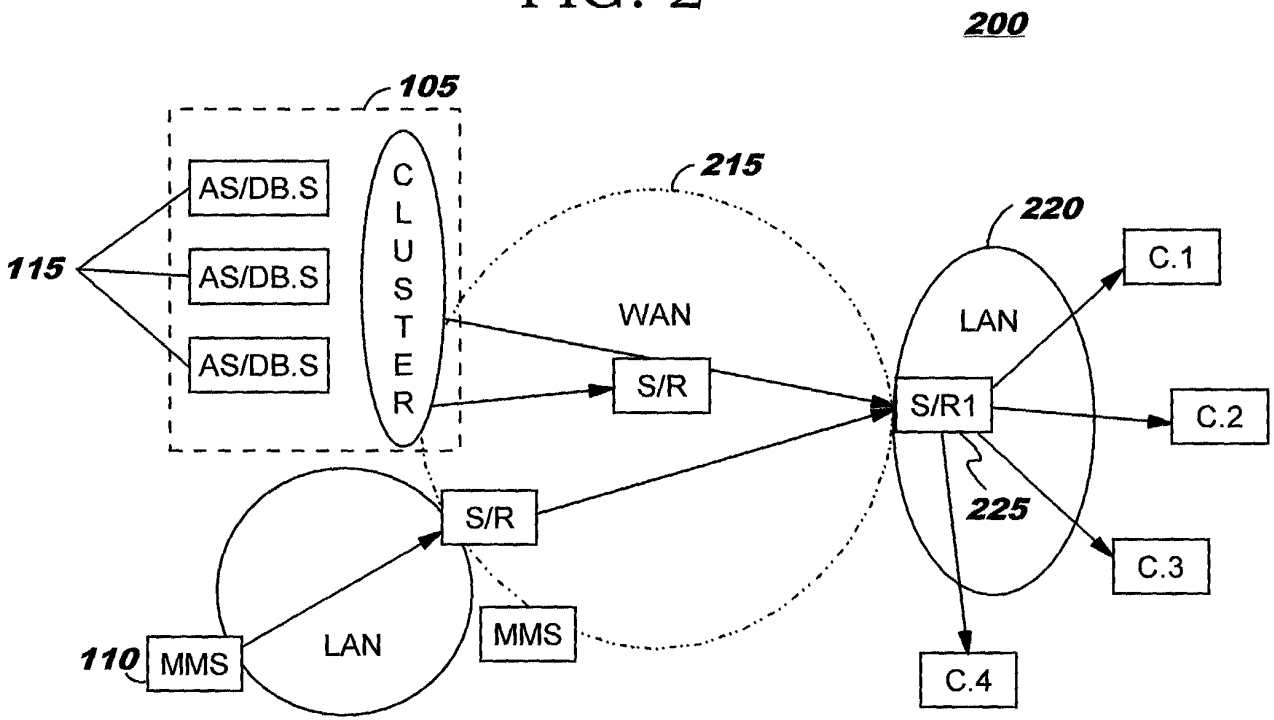
FIG. 2



AS/DB.S = Application Server or Database Server
S/R = Switch/Router
MMS = Multimedia Server

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FIG. 3A
(Prior Art)

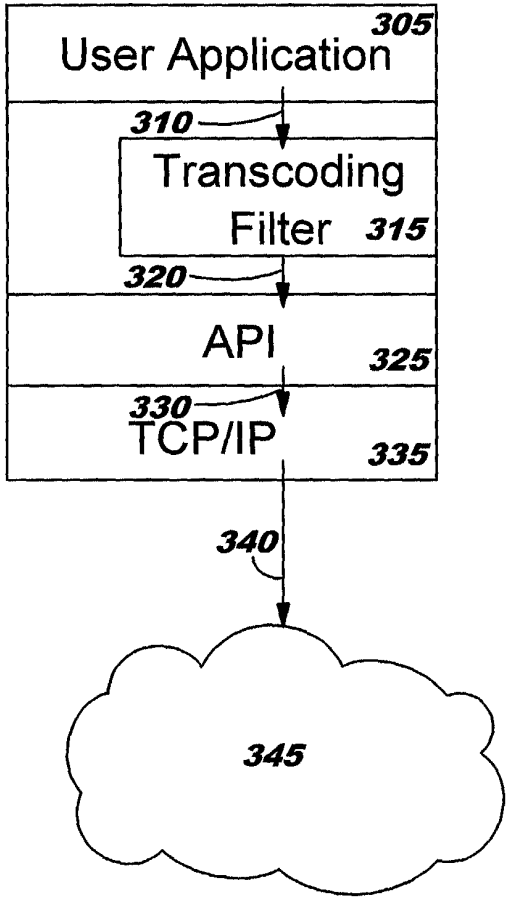
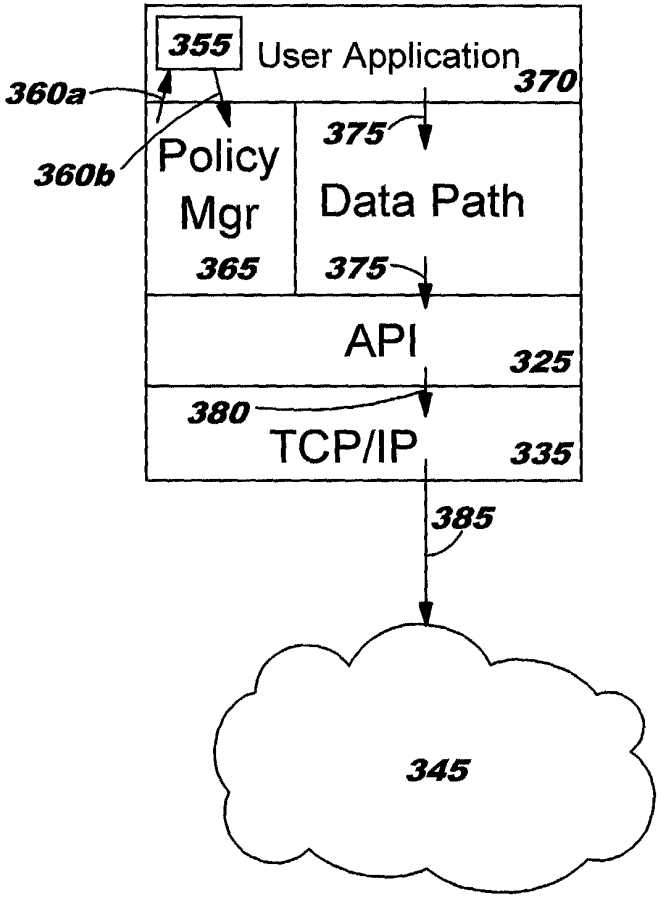
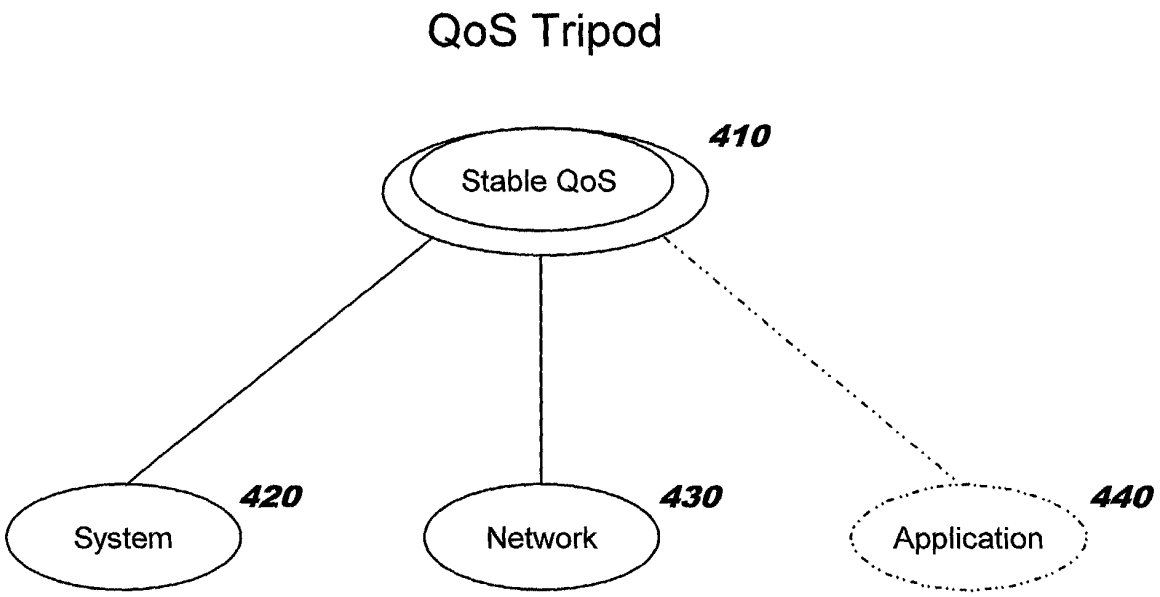


FIG. 3B



20110095Shoot

FIG. 4



20160: 9595hoot

FIG. 5

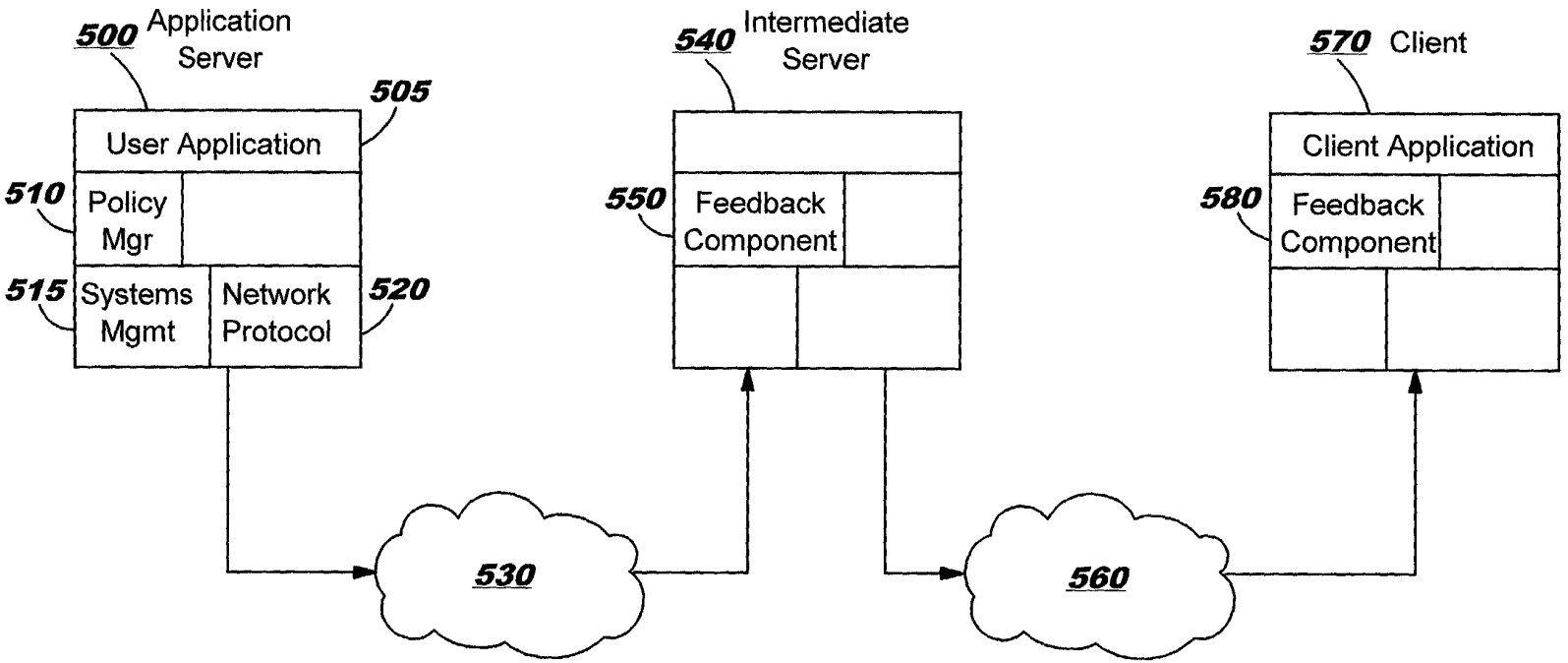


FIG. 6

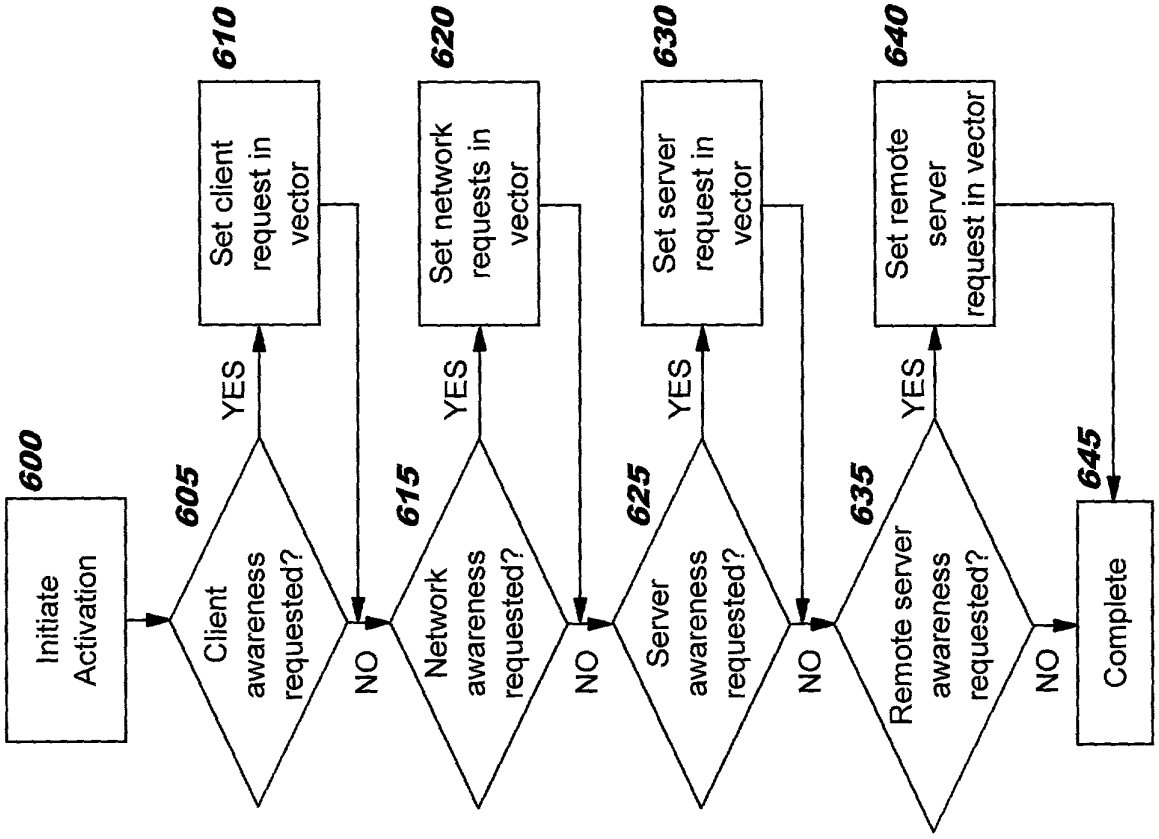

600
Initiate Activation
605
Client awareness requested?
YES
610
Set client request in vector
NO
615
Network awareness requested?
YES
620
Set network requests in vector
NO
625
Server awareness requested?
YES
630
Set server request in vector
NO
635
Remote server awareness requested?
YES
640
Set remote server request in vector
NO
645
Complete

FIG. 7

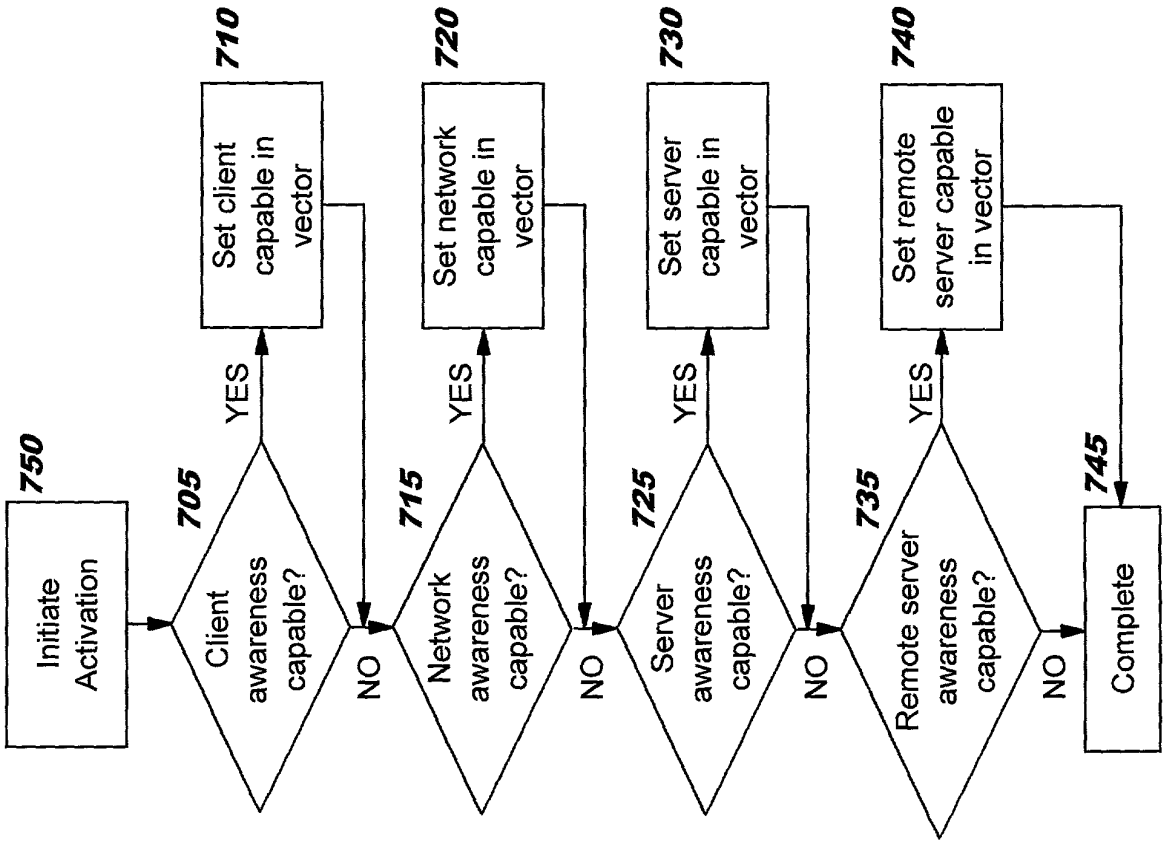

750
Initiate Activation
705
Client awareness capable?
YES
710
Set client capable in vector
NO
715
Network awareness capable?
YES
720
Set network capable in vector
NO
725
Server awareness capable?
YES
730
Set server capable in vector
NO
735
Remote server awareness capable?
YES
740
Set remote server capable in vector
NO
745
Complete

FIG. 8

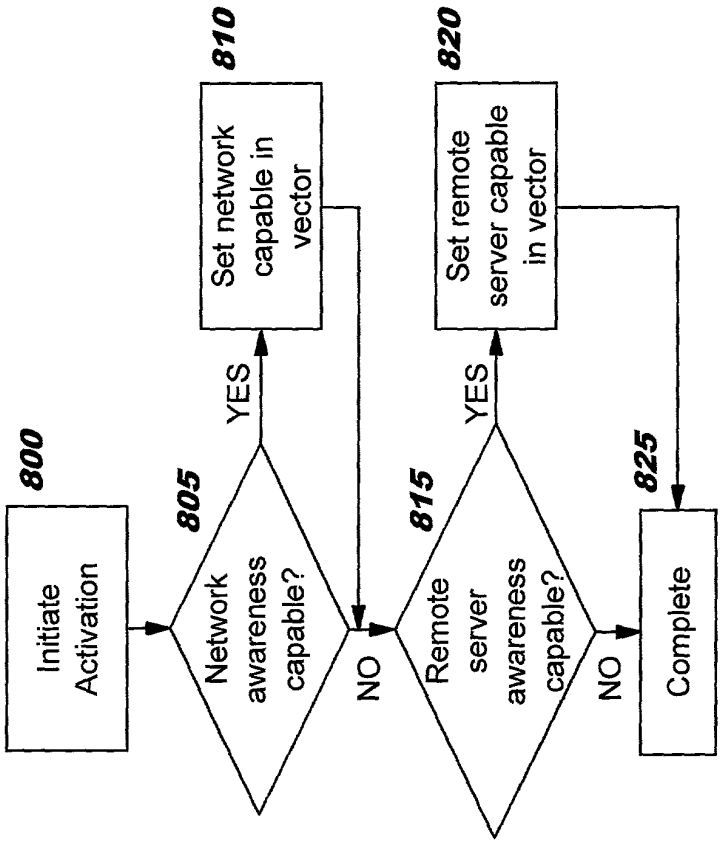

800
Initiate Activation
805
Network awareness capable?
YES
810
Set network capable in vector
NO
815
Remote server awareness capable?
YES
820
Set remote server capable in vector
NO
825
Complete

FIG. 9

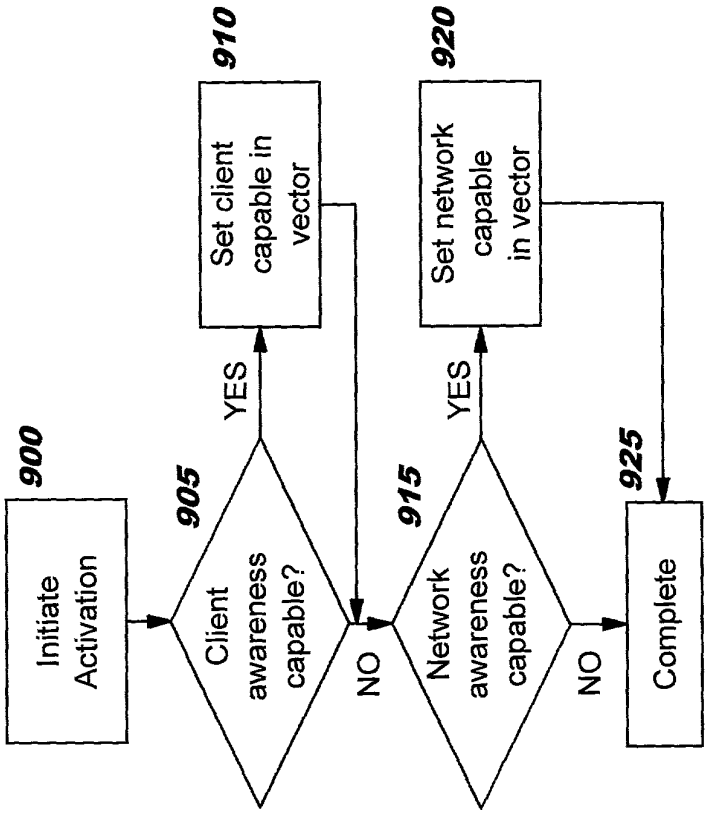

900
Initiate Activation
905
Client awareness capable?
YES
910
Set client capable in vector
NO
915
Network awareness capable?
YES
920
Set network capable in vector
NO
925
Complete

FIG. 10

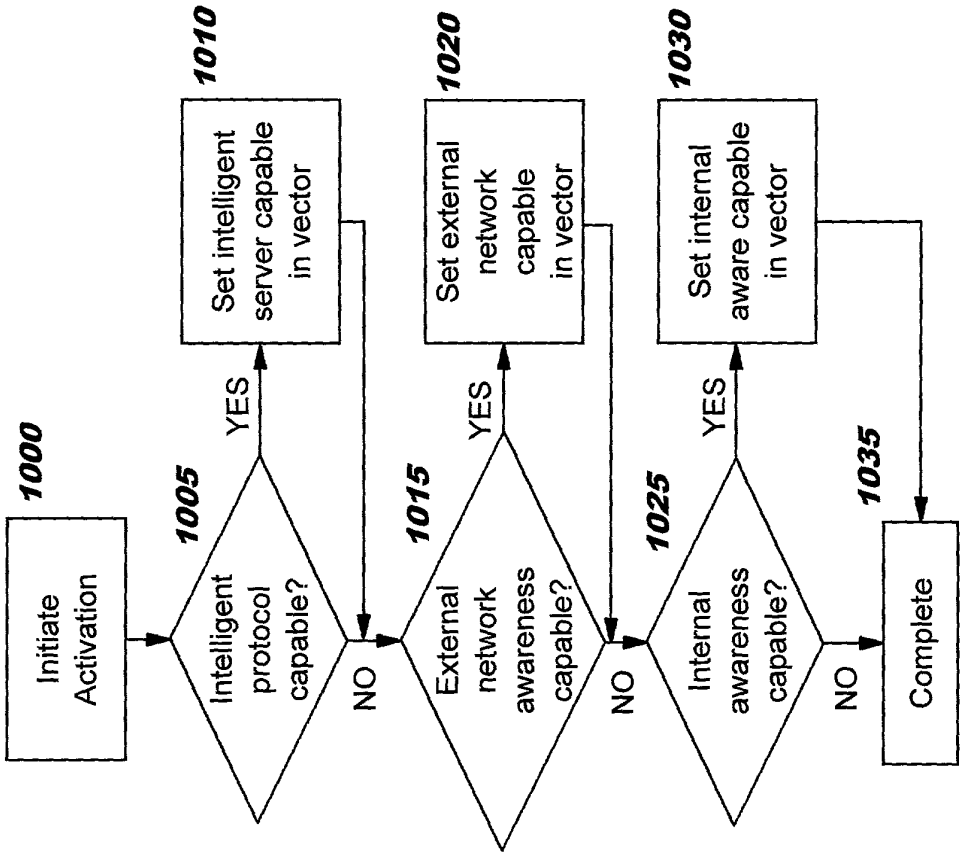

1000
Initiate Activation
1005
Intelligent protocol capable?
YES
1010
Set intelligent server capable in vector
NO
1015
External network awareness capable?
YES
1020
Set external network capable in vector
NO
1025
Internal awareness capable?
YES
1030
Set internal aware capable in vector
NO
1035
Complete

FIG. 11

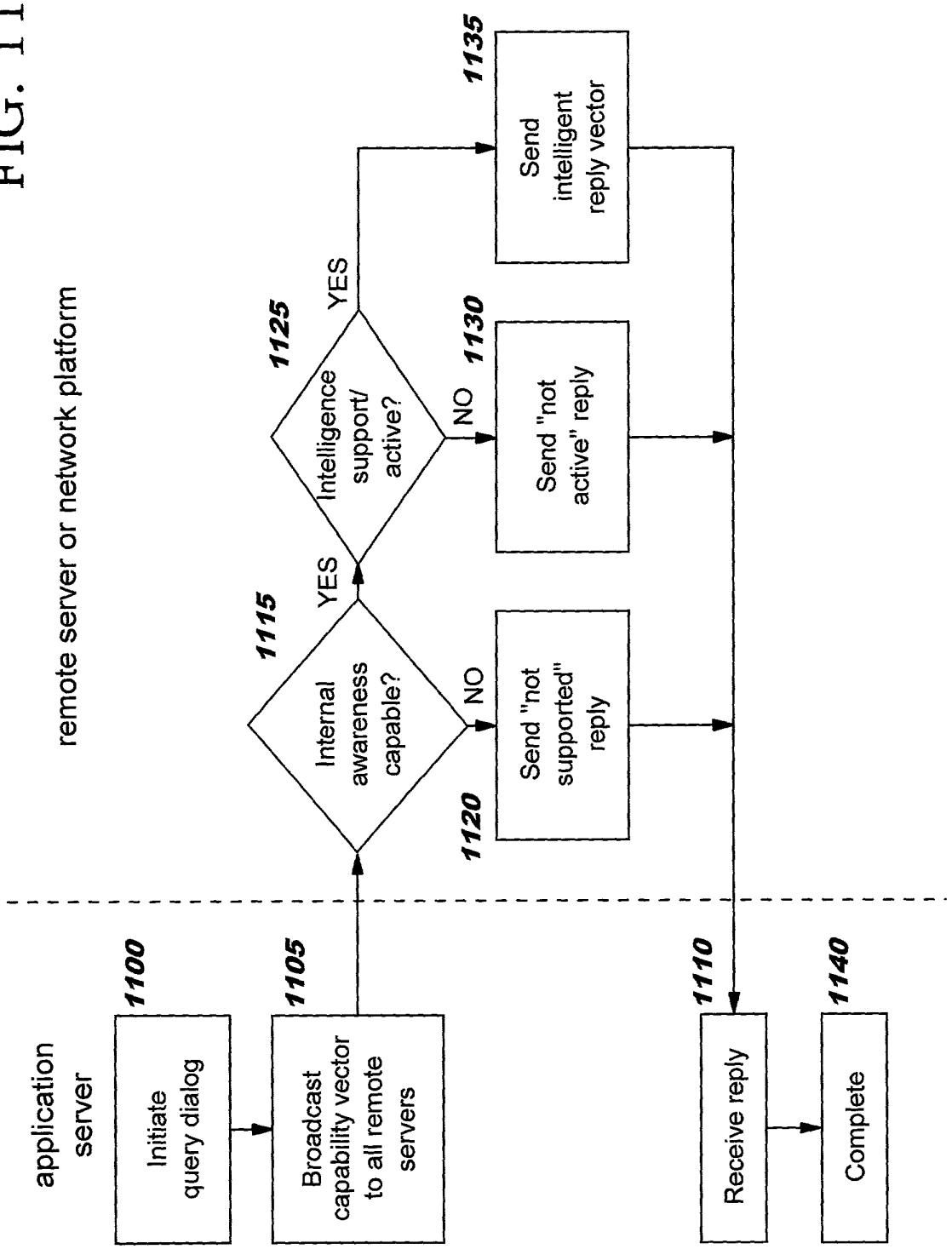

application server
remote server or network platform
1100
Initiate query dialog
1105
Broadcast capability vector to all remote servers
1115
Internal awareness capable?
YES
NO
1120
Send "not supported" reply
1125
Intelligence support/ active?
YES
NO
1130
Send "not active" reply
1135
Send intelligent reply vector
1110
Receive reply
1140
Complete

FIG. 12

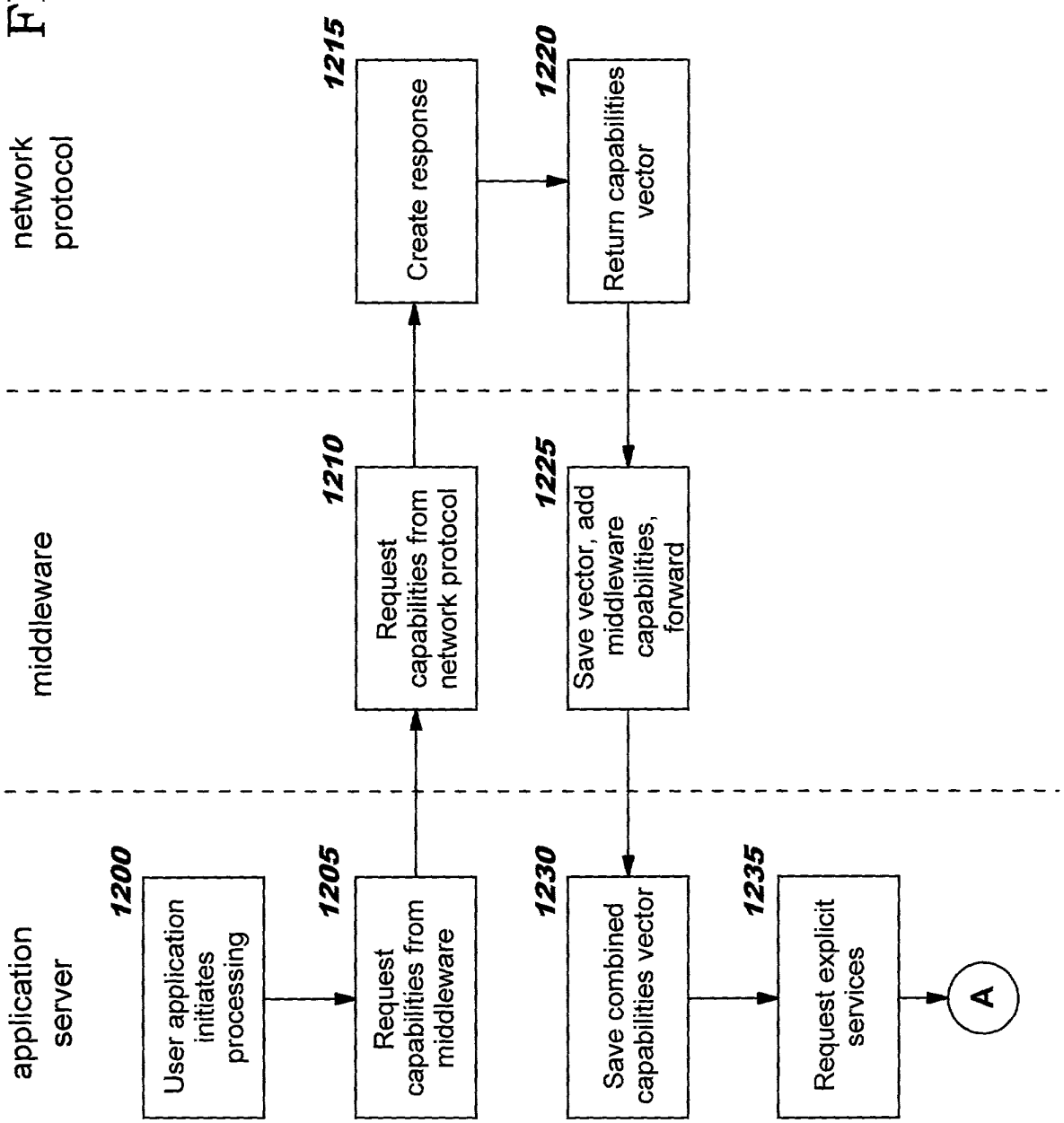

application server
middleware
network protocol
1200
User application initiates processing
1205
Request capabilities from middleware
1210
Request capabilities from network protocol
1215
Create response
1220
Return capabilities vector
1225
Save vector, add middleware capabilities, forward
1230
Save combined capabilities vector
1235
Request explicit services
A

FIG. 13

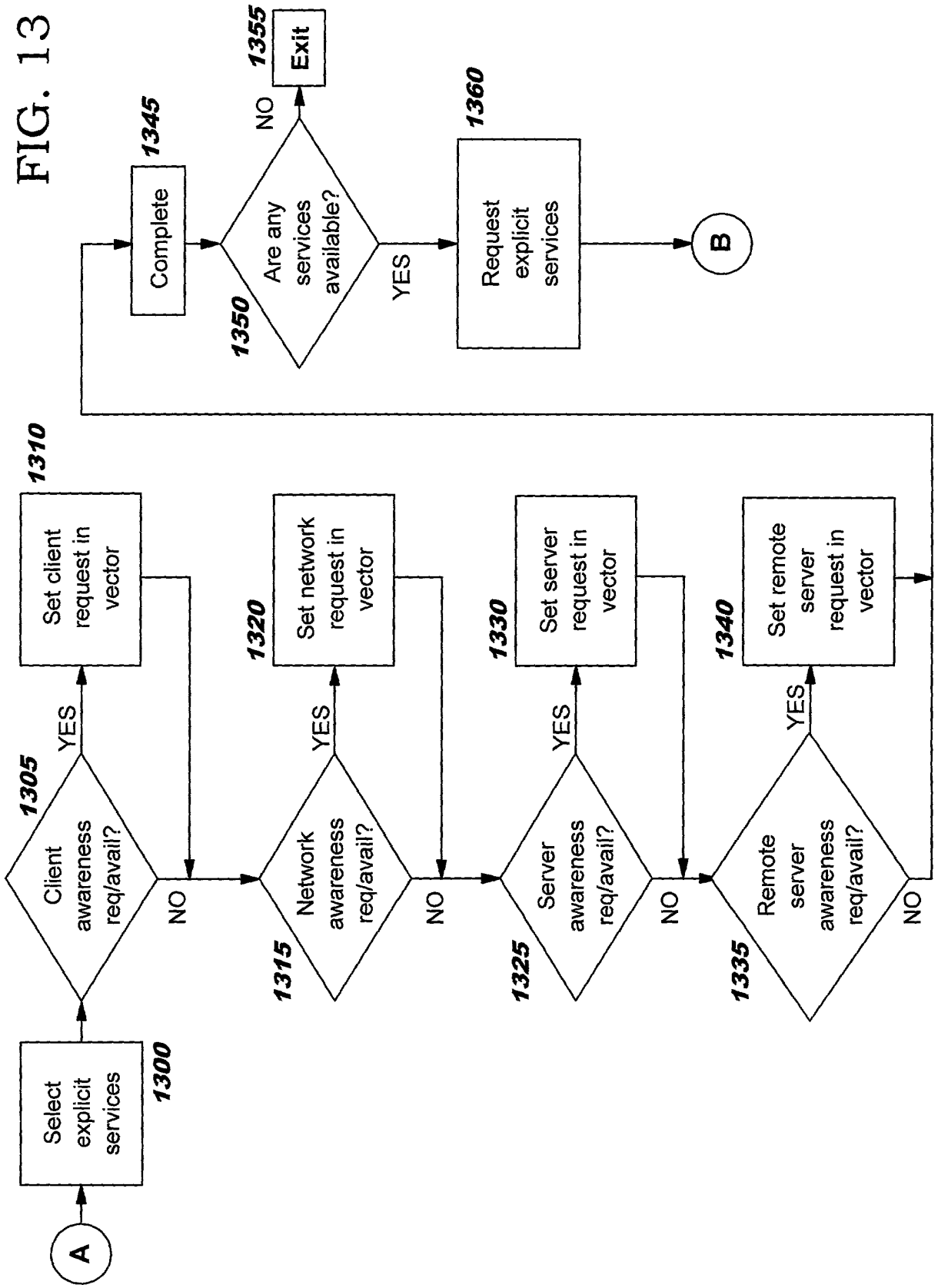

A
Select explicit services
1300
Client awareness req/avail?
1305
YES
Set client request in vector
1310
NO
Network awareness req/avail?
1315
YES
Set network request in vector
1320
NO
Server awareness req/avail?
1325
YES
Set server request in vector
1330
NO
Remote server awareness req/avail?
1335
YES
Set remote server request in vector
1340
NO
Are any services available?
1350
YES
Request explicit services
1360
B
Complete
1345
NO
Exit
1355

FIG. 14

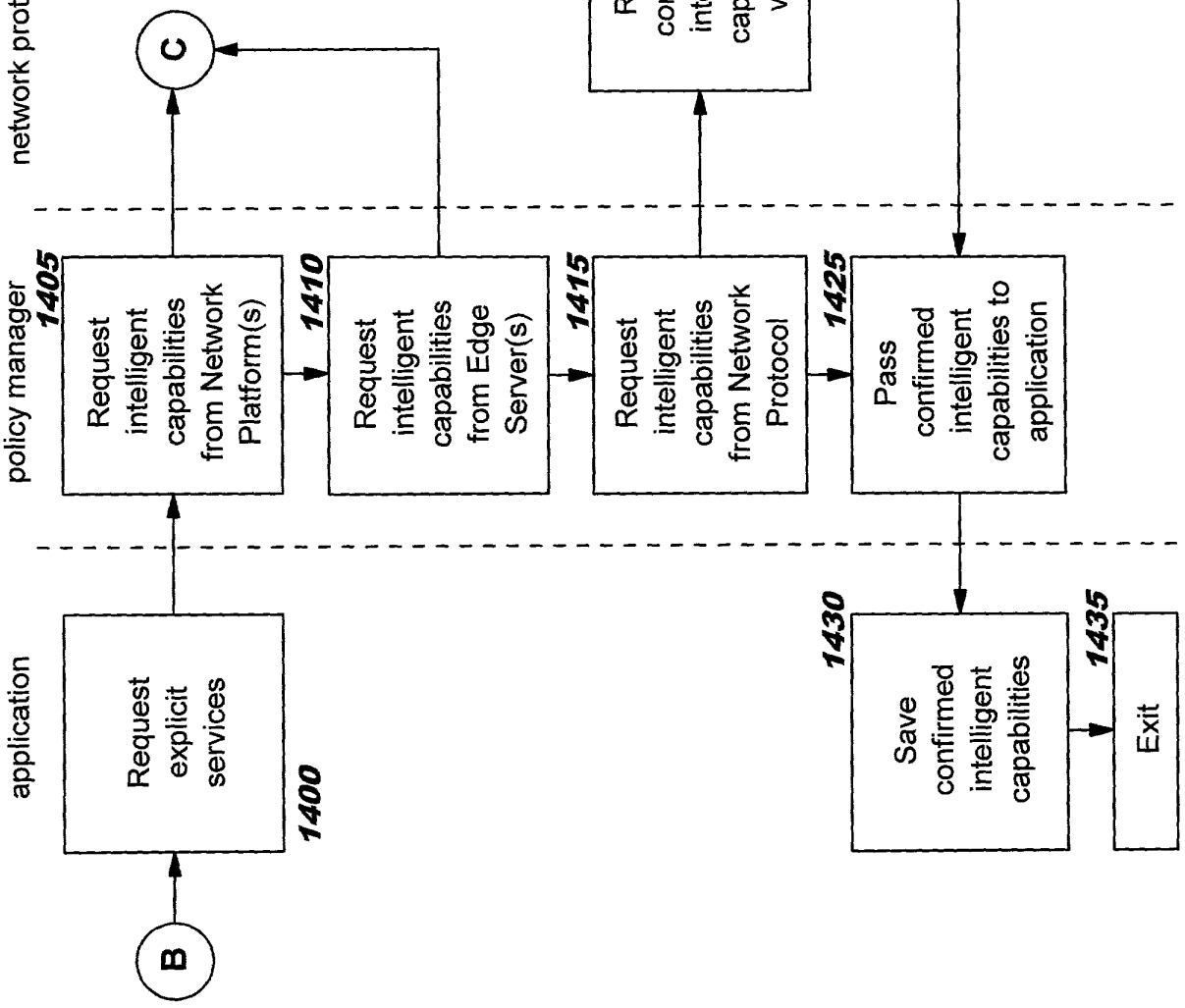

application
policy manager
network protocol
B
C
Request explicit services
1400
Request intelligent capabilities from Network Platform(s)
1405
Request intelligent capabilities from Edge Server(s)
1410
Request intelligent capabilities from Network Protocol
1415
Return confirmed intelligent capabilities vector
1420
Pass confirmed intelligent capabilities to application
1425
Save confirmed intelligent capabilities
1430
Exit
1435

FIG. 15

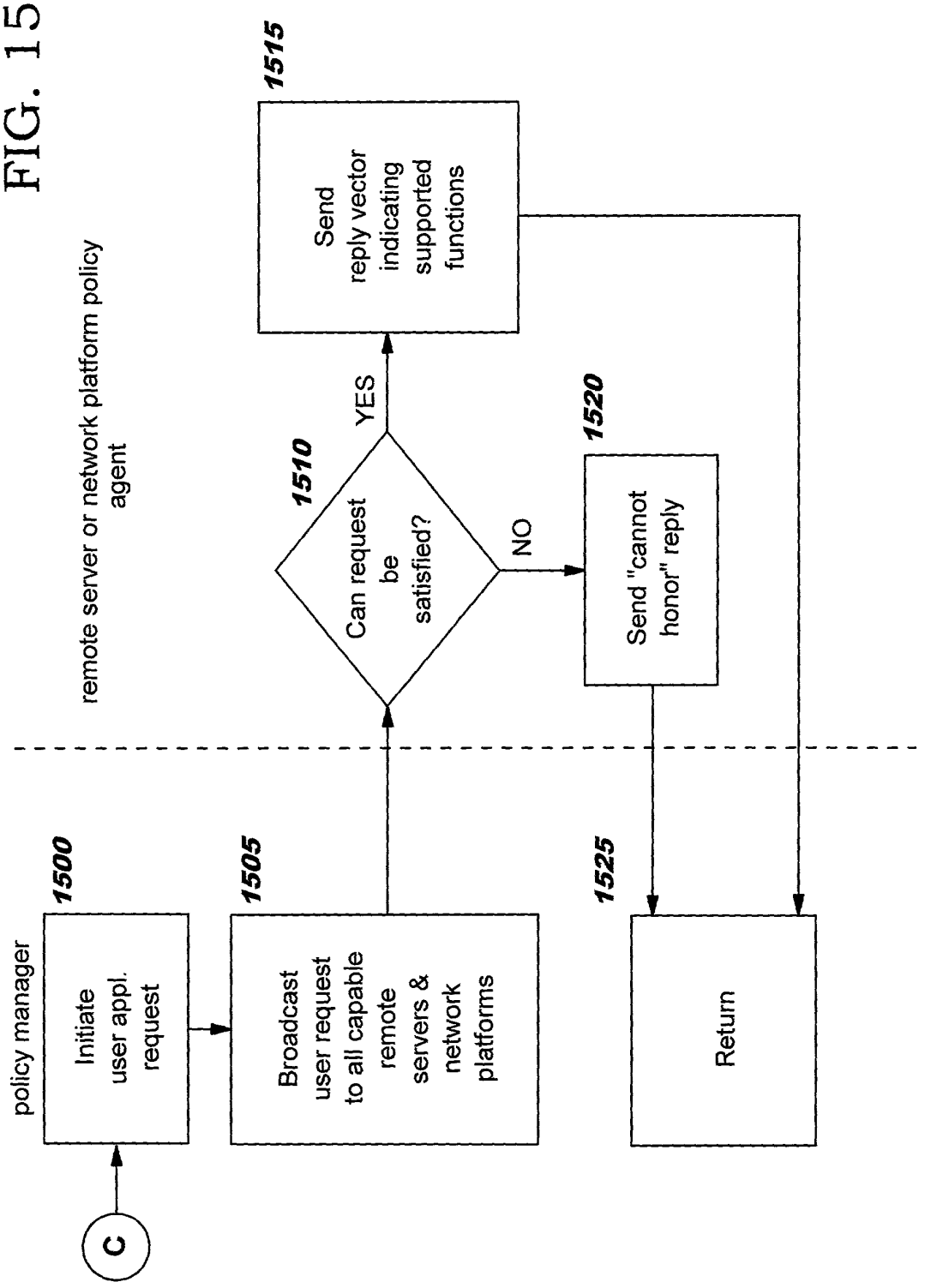

policy manager
remote server or network platform policy agent
C
1500
Initiate user appl. request
1505
Broadcast user request to all capable remote servers & network platforms
1510
Can request be satisfied?
YES
NO
1515
Send reply vector indicating supported functions
1520
Send "cannot honor" reply
1525
Return

FIG. 16

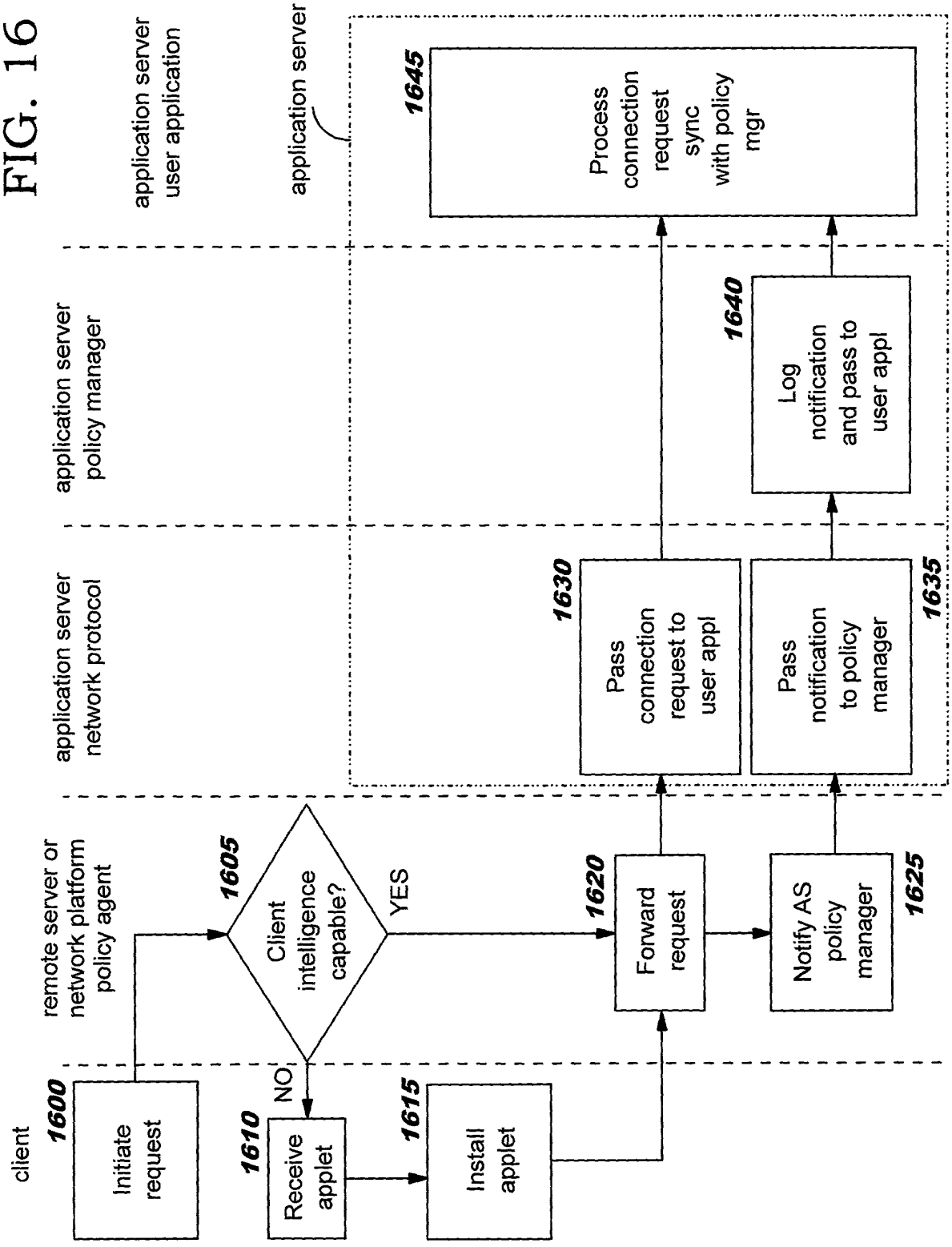
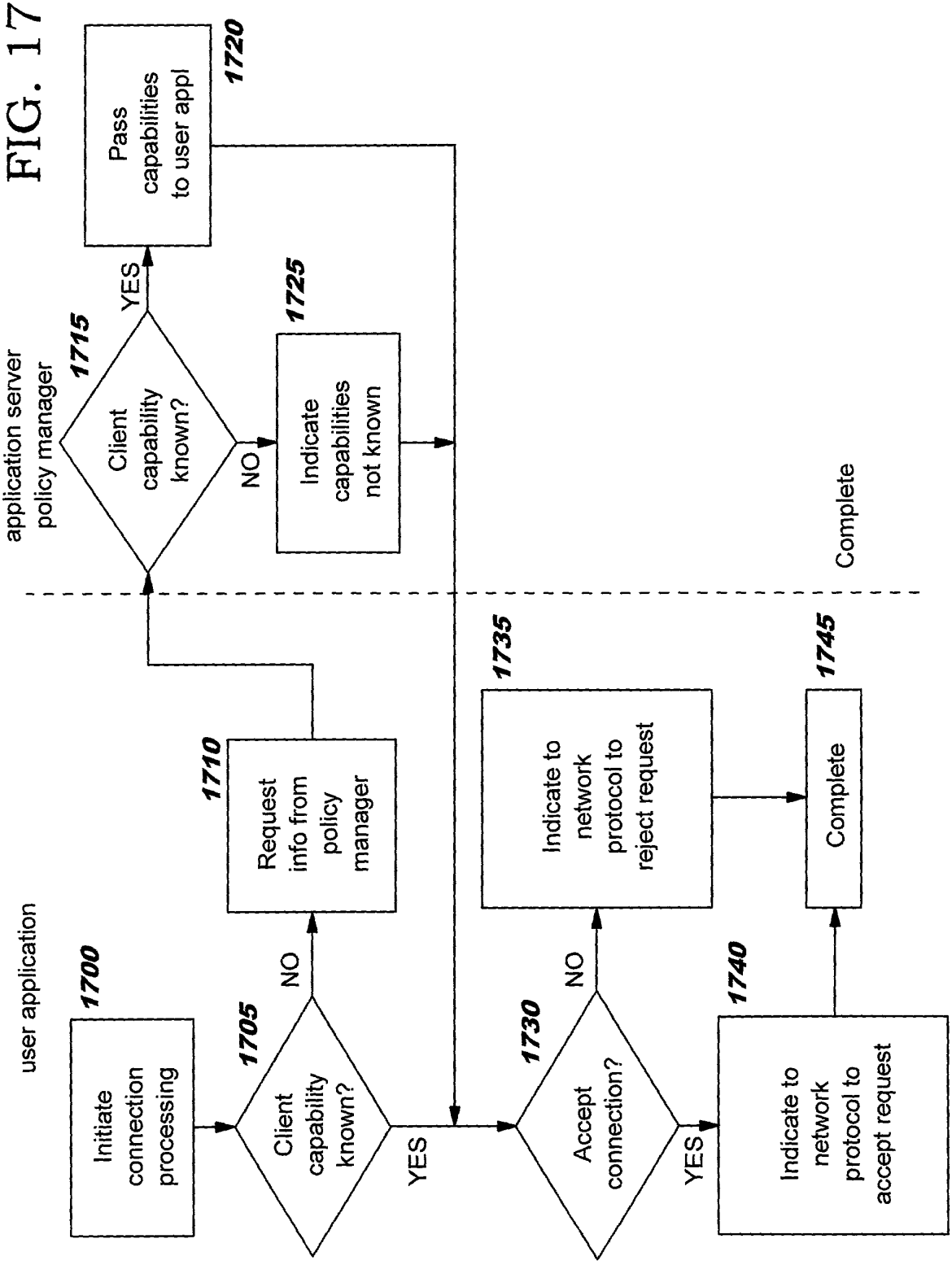

client
remote server or network platform policy agent
application server network protocol
application server policy manager
application server user application
application server
1600
Initiate request
1605
Client intelligence capable?
NO
YES
1610
Receive applet
1615
Install applet
1620
Forward request
1625
Notify AS policy manager
1630
Pass connection request to user appl
1635
Pass notification to policy manager
1640
Log notification and pass to user appl
1645
Process connection request sync with policy mgr

FIG. 17


user application
application server policy manager
Complete
1700
Initiate connection processing
1705
Client capability known?
NO
YES
1710
Request info from policy manager
1715
Client capability known?
YES
NO
1720
Pass capabilities to user appl
1725
Indicate capabilities not known
1730
Accept connection?
NO
YES
1735
Indicate to network protocol to reject request
1740
Indicate to network protocol to accept request
1745
Complete

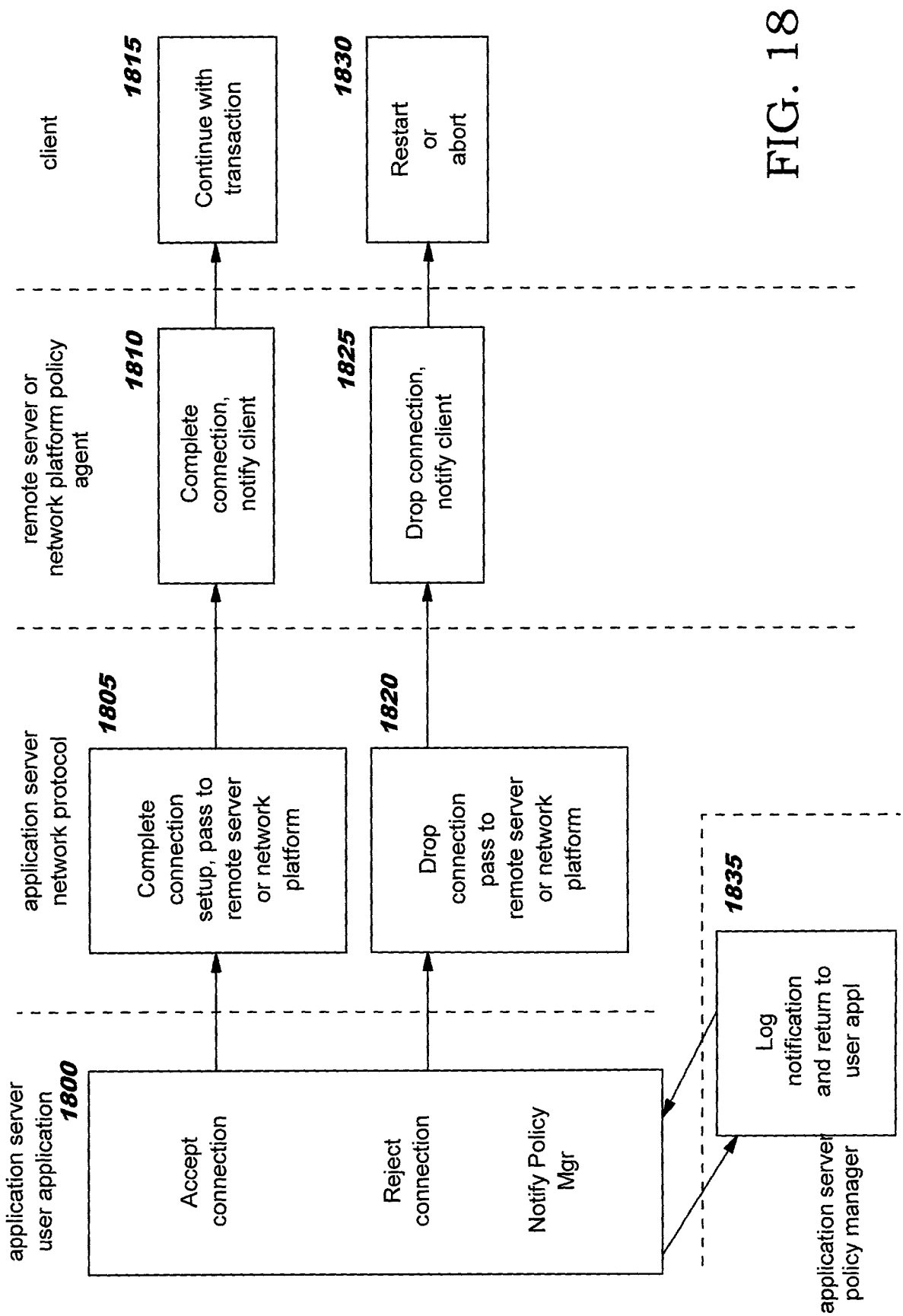

application server user application
1800
Accept connection
Reject connection
Notify Policy Mgr
application server network protocol
1805
Complete connection setup, pass to remote server or network platform
1820
Drop connection pass to remote server or network platform
remote server or network platform policy agent
1810
Complete connection, notify client
1825
Drop connection, notify client
client
1815
Continue with transaction
1830
Restart or abort
1835
Log notification and return to user appl
application server policy manager

FIG. 18

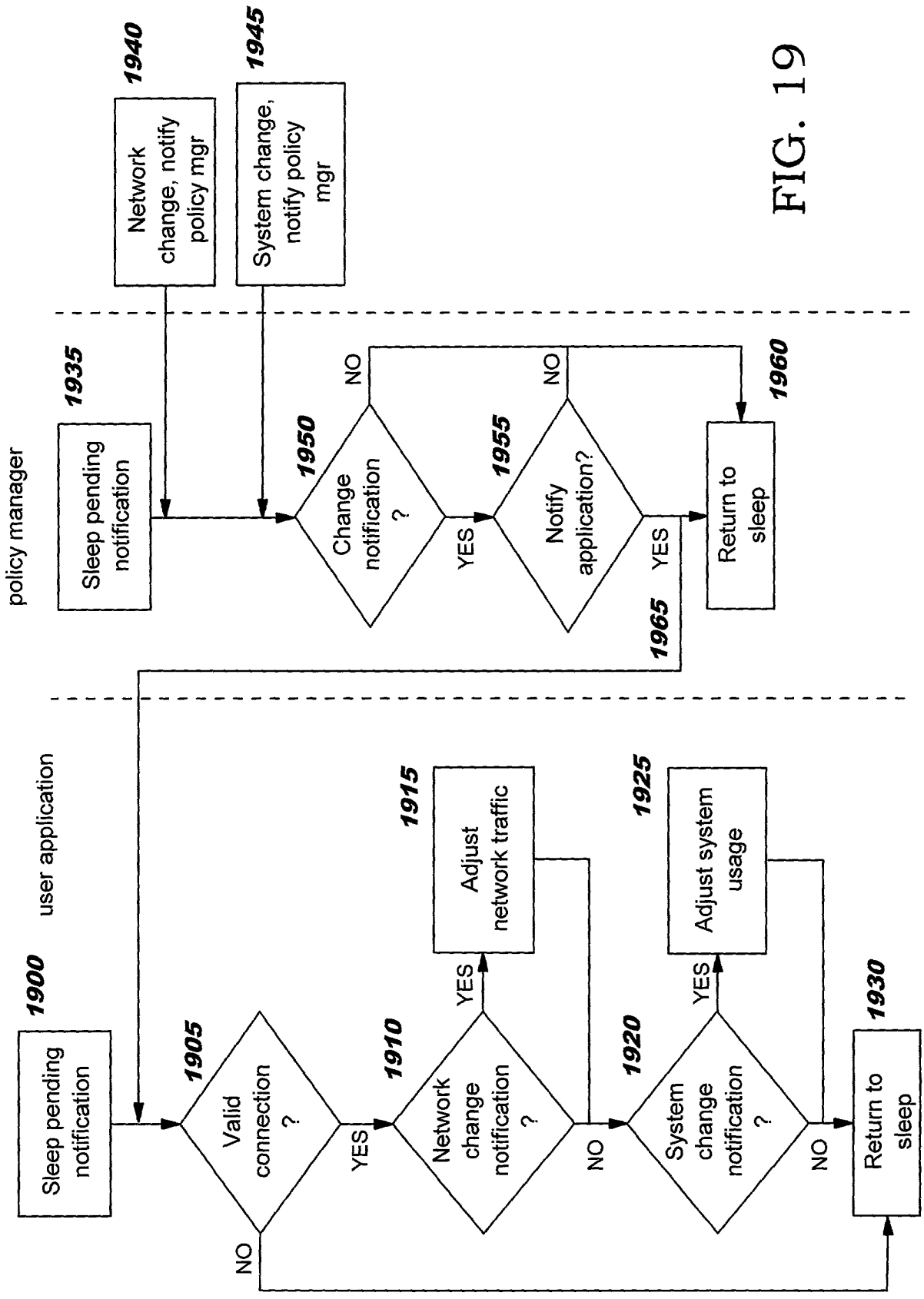

user application
policy manager
1900
Sleep pending notification
1905
Valid connection ?
NO
YES
1910
Network change notification ?
YES
1915
Adjust network traffic
NO
1920
System change notification ?
YES
1925
Adjust system usage
NO
1930
Return to sleep
1935
Sleep pending notification
1940
Network change, notify policy mgr
1945
System change, notify policy mgr
1950
Change notification ?
NO
YES
1955
Notify application?
NO
YES
1960
Return to sleep
1965

FIG. 19

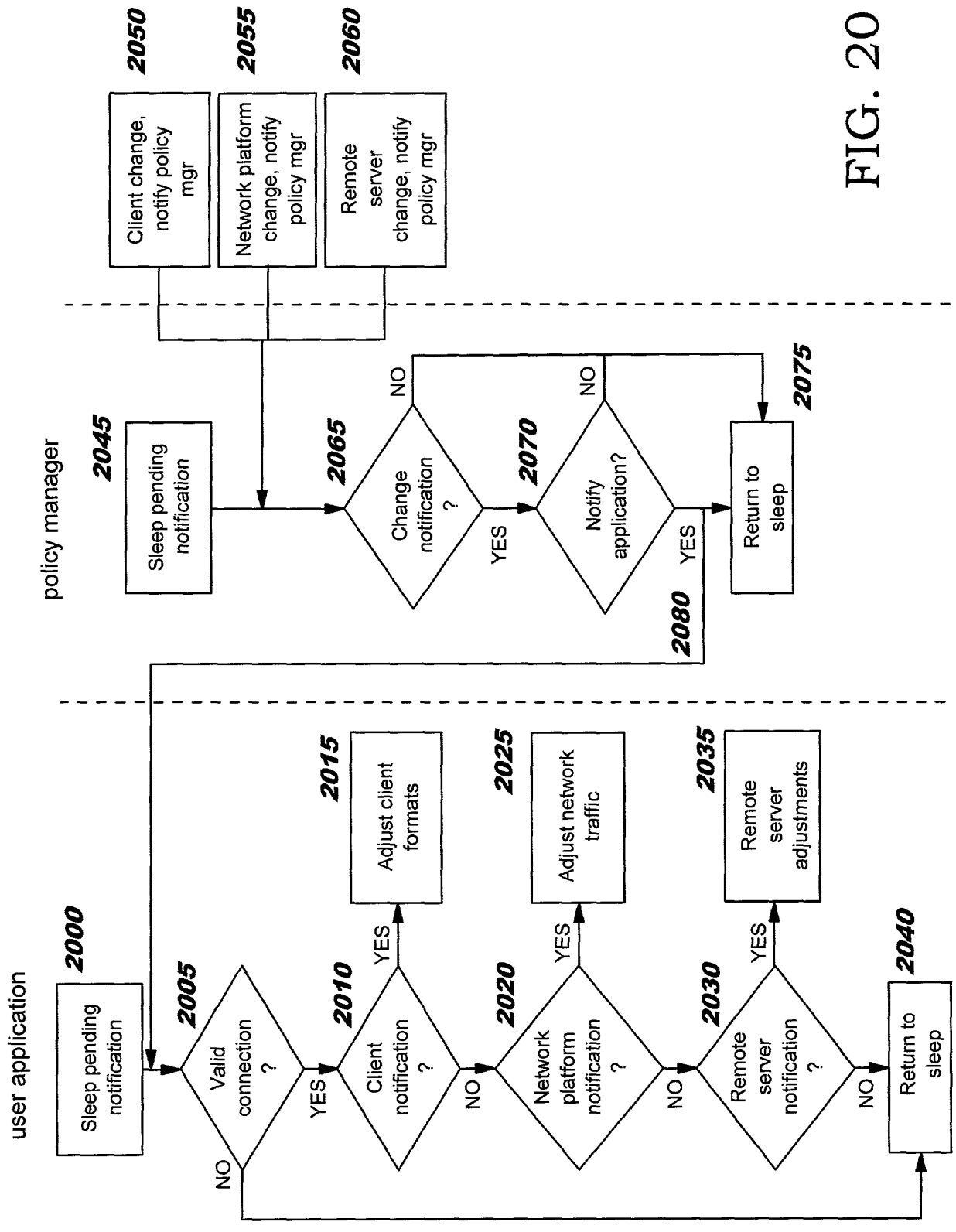

user application
2000
Sleep pending notification
2005
Valid connection ?
NO
YES
2010
Client notification ?
YES
2015
Adjust client formats
NO
2020
Network platform notification ?
YES
2025
Adjust network traffic
NO
2030
Remote server notification ?
YES
2035
Remote server adjustments
NO
2040
Return to sleep
2080
policy manager
2045
Sleep pending notification
2065
Change notification ?
NO
YES
2070
Notify application?
NO
YES
2075
Return to sleep
2050
Client change, notify policy mgr
2055
Network platform change, notify policy mgr
2060
Remote server change, notify policy mgr

FIG. 20

FIG. 21

2100

	Functional Area	Field	Description
2110	**Client**		
	Field-1	Available	Indicates system support status, e.g. yes/no
	Field-2	Requested	Indicates whether another entity requested the function
	Field-3	Options	Examples: levels of congestion, device class supported, QoS required, etc.
2120	**Network Platform**		
	Field-1	Available	Same as client
	Field-2	Requested	Same as client
	Field-2	Options	Examples: levels of congestion supported, type of network (LAN/WAN)
2130	**Remote Server**		
	Field-1	Available	Same as client
	Field-2	Requested	Same as client
	Field-3	Options	Examples: levels of congestion, storage constraints, processor constraints
2140	**Network Protocol**		
	Field-1	Available	Same as client
	Field-2	Requested	Same as client
	Field-3	Options	Examples: levels of congestion, system constraints, buffer constraints, active connection limit
2150	**System**		
	Field-1	Available	Same as client
	Field-2	Requested	Same as client
	Field-3	Options	Examples: levels of congestion, system storage constraints, processing constraints

FIG. 22

2200

	Functional Area	Field	Description
2210	**System Identifier**		
2211	Field-1	System type	Network platform, remote server, etc.
2212	Field-2	Identifier type	Name, address, etc.
2213	Field-3	System identifier	Actual identifier
2220	**Client**		
	Field-1	Available	Indicates system support status, e.g. yes/no
	Field-2	Requested	Indicates whether another entity requested the function
	Field-3	Options	Examples: levels of congestion, device class supported, QoS required, etc.
2230	**Network Platform**		
	Field-1	Available	Same as client
	Field-2	Requested	Same as client
	Field-2	Options	Examples: levels of congestion supported, type of network (LAN/WAN)
2240	**Remote Server**		
	Field-1	Available	Same as client
	Field-2	Requested	Same as client
	Field-3	Options	Examples: levels of congestion, storage constraints, processor constraints
2250	**Network Protocol**		
	Field-1	Available	Same as client
	Field-2	Requested	Same as client
	Field-3	Options	Examples: levels of congestion, system constraints, buffer constraints, active connection limit
2260	**System**		
	Field-1	Available	Same as client
	Field-2	Requested	Same as client
	Field-3	Options	Examples: levels of congestion, system storage constraints, processing constraints

FIG. 23

2300

	Functional Area	Field	Description
2310	**System Identifier**		
	Field-1	System type	Network platform, application server, etc.
	Field-2	Identifier type	Name, address, etc.
	Field-3	System identifier	Actual system identifier
2320	**Application Identifier**		
	Field-1	Type	Type of identifier: name, address, etc.
	Field-2	Identifier	Actual identifier
2330	**Client**		
	Field-1	Return code	Success or failure
2332	Field-2	Requested	Indicates whether another entity requested the function
	Field-3	Options/returns	Mask indicating options supported
2340	**Network Platform**		
2341	Field-1	Return code	Success or failure
2342	Field-2	Requested	Same as client
2343	Field-2	Options/returns	Mask indicating options supported
2350	**Remote Server**		
2351	Field-1	Return code	Success or failure
2352	Field-2	Requested	Same as client
2353	Field-3	Options/returns	Mask indicating options supported
2360	**Network Protocol**		
2361	Field-1	Return code	Success or failure
2362	Field-2	Requested	Same as client
2363	Field-3	Options/returns	Mask indicating options supported
2370	**System**		
	Field-1	Return code	Success or failure
2372	Field-2	Requested	Same as client
	Field-3	Options/returns	Mask indicating options supported

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FIG. 24

2400

	Functional Area	Field	Description
2410	**System Identifier**		
	Field-1	System type	Network platform, remote server, etc.
	Field-2	Identifier type	Name, address, etc.
	Field-3	Identifier	Actual identifier
2420	**Application Identifier(s)**		May be more than one
	Field-4	Type	Type of identifier: name, address, etc.
	Field-5	Identifier	Actual identifier
	Congestion		
2430	Field-6	Level	Value indicating new congestion level
	Optional codes		
	Field-7	Number	Number of optional codes included
2440	Field-8	Total length	Total length of all codes including this header
	Field-9	First code	Optional code identifier
	Field-10	Length	Length of this code
	Field-11	Code	Actual code

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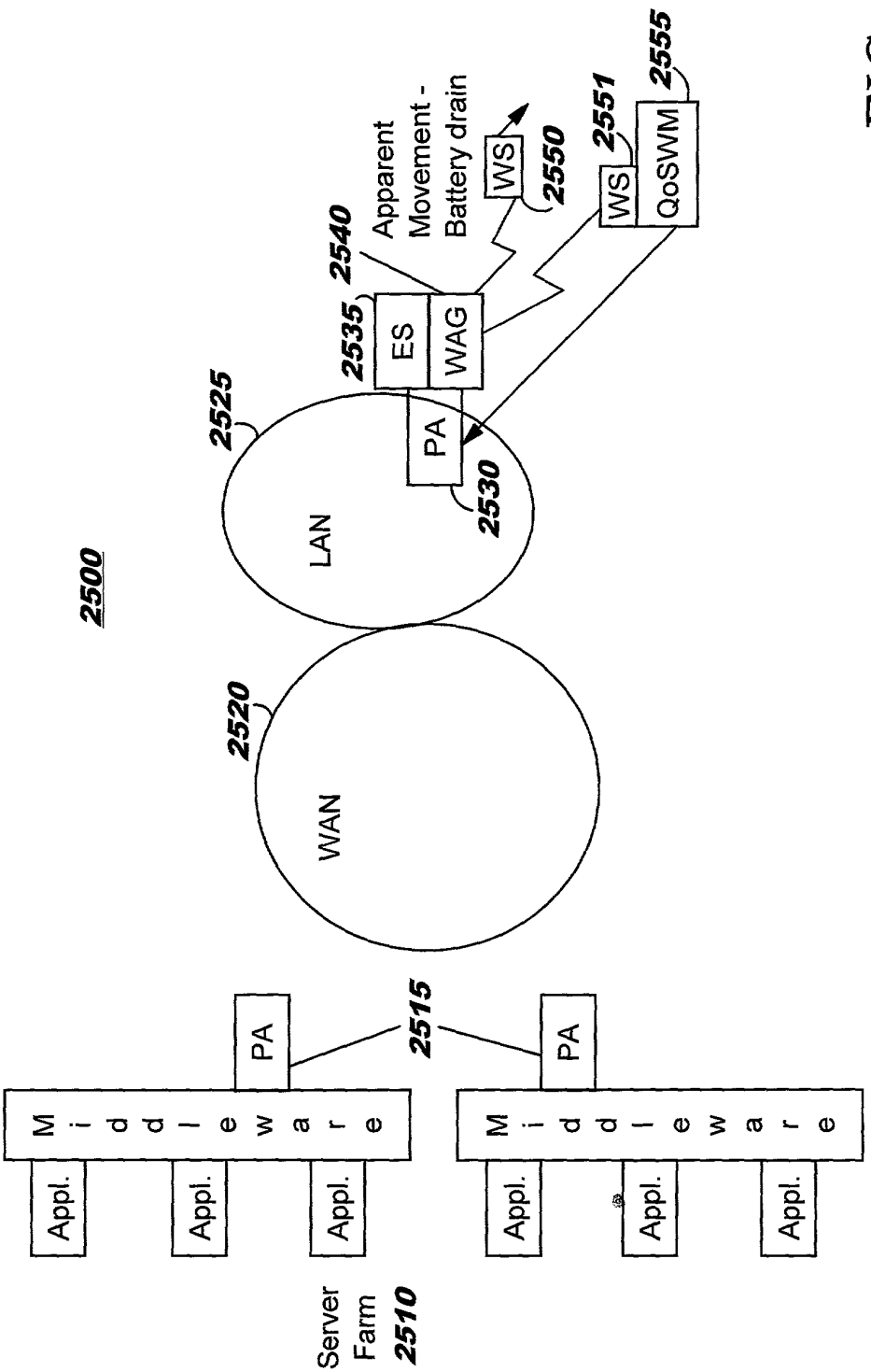
2500
2520
WAN
2525
LAN
2515
PA
2530
2535
ES
WAG
2540
Apparent
Movement -
Battery drain
WS
2550
WS
2551
QoSWM
2555
Middleware
Appl.
Appl.
Appl.
PA
Middleware
Appl.
Appl.
Appl.
Server
Farm
2510

FIG. 25